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AUTHOR	Roberts, Jimmy D.; Williams, Wanda L.
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ABSTRACT

This document serves as an instructional text for teaching students the Secretary's Commission on Achieving Necessary Skills (SCANS) competencies. The SCANS competencies encompass basic skills (reading, writing, and arithmetic), thinking skills (creative thinking, decision-making, reasoning and problem-solving), and personal qualities such as self-esteem and honesty. Specifically, the five competencies are (1) resources, identifying and allocating means; (2) interpersonal, working well with others; (3) information, acquiring and using knowledge; (4) systems, understanding complex relationships; and (5) technology, working with a variety of technologies. This report provides a presentation outline for teaching the SCANS skills, and identifies eight objectives for teaching them across the curriculum, which include identifying places in the curriculum where SCANS competencies should be taught, and creating a coherent sequential method for teaching the skills throughout the curriculum to all students. The competencies and foundation skills are further detailed, and sample overhead transparencies, and assignments and activity sheets for use in teaching each of the five competencies are provided. (EMH)

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ED 423 007

Teaching the *SCANS Competencies Across the Curriculum

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*Secretary's Commission on Achieving Necessary Skills

Skills Standards/Quality Work Force Planning
Workforce Development Board of Central Texas
200 North Main Street
P. O. Box 450
Belton TX 76513
(254) 939-3207 x 223

Central Texas Tech Prep Consortium
Temple College
2600 South First Street
Temple TX 76504-7435
(254) 298-8482

Wanda L. Williams

BIOGRAPHY

Wanda L. Williams is the Project Director for the Skills Standards/Quality Work Force Planning, a subcommittee of the Workforce Development Board of Central Texas.

She is a native of Houston and a seventh generation Texan.

Wanda attended South Houston High School, finishing in 1974, and then graduated with a bachelors degree from Texas A&M University in 1978. She received a law degree from the University of Texas School of Law in 1983.

She has a varied background, including work as a scientific research assistant, as a public school teacher, and as a college adjunct professor in Business and Business law.

Wanda is a licensed attorney with the State Bar of Texas and has seven years legal experience with State and Local Governments.

She came to the Central Texas Quality Work Force Planning Office in August 1993, where she works to form partnerships between schools and business.

Jimmy D. Roberts

BIOGRAPHY

Jimmy D. Roberts is the Project Director for the Central Texas Tech Prep Consortium, officed at Temple College in Temple, Texas.

He is a native of Orange County, Texas and a first generation Texan.

Jimmy attended Bridge City High School, finishing in 1973, and then graduated with a Bachelor of Arts degree from McNeese State University in 1976. He attended graduate school at Lamar University, University of Texas at Austin, and Texas A&M where he received a Masters of Education in 1988.

He has a varied work background, including work as a public school teacher grades 6-12, a pre-school teacher, an architectural illustrator and draftsman, and a Curriculum Director.

Jimmy came to the Tech Prep office in March 1992 as the Curriculum Coordinator. He became the Project Director in July 1995.

Presentation Outline for Teaching the SCANS* Competencies Across the Curriculum

*(Secretary's Commission on Achieving Necessary Skills)

Objective 1
To create a need for integrating workplace skills into the content specific class

Activity
Facilitator led discussion. Participants will role play the part of an employer and brainstorm on the topic *What Kind of Worker Would You Hire?* Discussion should focus on attributes other than the requisite job specific skills.

Evaluation
Group generated list identifying important characteristics of a new hire. Create a generic help wanted ad.

Objective 2
To introduce SCANS foundation skills and competencies

Activity
Facilitator will give the background for the SCANS report and introduce the foundation skills and competencies. The participant generated list will be compared to the SCANS skills and competencies. Facilitator led discussion. Possible issues might be: Where do potential employees learn the identified skills? What are the SCANS competencies? How do you assess if potential employee exhibits the identified qualities and competencies?

Evaluation
Group discussion

Objective 3
To conceptualize and reflect on personal skills and to analyze the relationship between SCANS competencies and academic disciplines

Activity
Participants will identify three or four of the twenty SCANS competencies that they feel represent their strongest skills as a worker and draw a visual representation of the skill. Participants will then identify one or two SCANS competencies which they feel are a "defining aspect" of the academic discipline they teach.

Evaluation
Volunteers share reflections and justify choices.

Objective 4
To develop a process for integrating the SCANS competencies in the context of a classroom activity

Activity
Lecture notes
Teaching skills explicitly - making connections
Teaching skills in context - some examples
Transfer skills to new context - Six factors which affect student transfer
Pass out "Definitions of Competencies and Foundation Skills" - further explanation of skills

Evaluation
Facilitator checking for understanding. Q&A

Objective 5
To further explore the SCANS competencies by identifying competent performance and to model a process for teaching a workplace skill

Activity
Participants will be assigned one or two of the SCANS competencies to study. Participants will make a short (one minute) presentation on the assigned topic. The facilitator will role play a teacher introducing the skill of "teaches others new skills". The facilitator/teacher will explicitly state expectations of performance, will debrief participants/class after activity using + Δ, and will help students identify situations where skill can be transferred.

Evaluation
Quality of presentations and discussion

Objective 6
To identify SCANS competencies which can be incorporated into specific subject area classrooms

Activity
Group activity. Groups will choose a classroom activity from a list of examples. Show example lesson activities. The group will identify the tasks to be performed in successfully completing assignment. The group will then correlate tasks to SCANS competencies.

Evaluation
Group reporter identifies tasks and competencies

Objective 7
To identify places in the curriculum in which to teach SCANS competencies

Activity
Use worksheet to identify skill addressed and methodology for instruction. Individual participant will identify a competency to address within a particular content area. The participant will identify the context in which the skill is to be taught, identify the attributes of the identified workplace skill which will be taught explicitly, and will identify ways in which the teacher can help the student transfer the skill to new contexts.

Optional additional activity:
Create a short list of topics from a content area which would be a natural place for teaching SCANS competencies.

Evaluation
Quality of products

Objective 8
To create a coherent sequential method for teaching all SCANS competencies throughout the curriculum for all students

Activity
Extend the list to include a progression of courses within a sequence or major. Participants can develop a matrix showing where skills are taught, developed and reinforced. Emphasis should be on place for SCANS throughout the curriculum.

Evaluation
Matrix should identify all SCANS competencies and show where each is taught or reinforced in a variety of contexts (i.e. courses and disciplines)

Overhead Transparencies

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Farm Machinery Experience
Own Tools

Production Workers

Some Rotating Shifts
Long & Short Term Assignments

Start Today

Machinists
Manual & CNC
All Shifts Available
Paid Weekly

EXPRESS PERSONNEL SERVICES
Taking applications 1218 So. 31st
9-11 & 1:30-3:00 Mon-Fri

Office Manager

WordPerfect - Lotus
A/P, A/R & Payroll

General Office

Good typing skills needed

Customer Svc Rep

People Skills
Professional

EXPRESS PERSONNEL SERVICES
Taking applications 1218 So. 31st
9-11 & 1:30-3:00 Mon-Fri

WANTED

Assistant Manager trainee interested in the field of physical fitness. Person who knows how to close a sale. Apply in person at Figure/Fitness World, Monday-Thursday after 9:30am.

GO WHERE THE ★JOBS★ ARE

If you are looking for factory/warehouse type work, Interim Personnel is the place to call.

Ask a friend. We've helped hundreds of people find work. We have lots of temporary jobs that could lead to permanent situations.

You owe it to yourself to apply today, after all, an application with Interim Personnel is like having an interview at most of Temple's best companies.

Current demand for:
- General Laborers

Belton, TX, [illegible] | Temple.

Classified Display **Employment**

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National Company expanding local operations and needs trainees to start immediately.

- No experience necessary
- Company training program
- No overnight travel
- Rapid advancement
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To arrange a personal interview call Mr. Dean at (817) 778-5511, Ext. 116 Monday, Tuesday, Wednesday between 9 am & 8 pm.

Classified Display **Employment**

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CLassified Display **Employment**

PART-TIME TELLERS

First National Bank of Temple has immediate openings for part-time tellers (20 hrs. wk.). Candidates must have excellent customer service skills and previous cash handling experience. Must be able to work hours between 7 a.m. - 6 p.m. Mon.-Fri. Previous banking experience preferred but not required.

Apply in Person

Personnel Dept. 3rd. Floor

Main & Avenue A
Downtown Temple

Member FDIC
FIRST NATIONAL BANK of TEMPLE
Downtown and H.K. Dodgen Loop
Belton Bank, Killeen Bank

The Bank That Puts You First.™

Send resume to:

Temple 4-C
P O Box 181
Temple, TX 76503-0181

Dental Office

Highly motivated person needed for established, progressive dental practice. Must be organized and have excellent communication skills. Must have chairside experience and basic accounting skills. Experienced only need to apply. Pleasant working conditions. Call 778-6141 between the hours of 8am-4pm only.

HAIR STYLIST

Lookin' Good has a career opportunity in management for a creative stylist. Generous commission, bonuses, profit sharing & more. Call 773-6145.

Electronics Technicians

Technicians: associates degree in electronics with component level experience required.
Never a fee, EOE M/F/H/V

Call Immediately!

771-0272
Interim Personnel

Registered Nurse's

NEEDED IMMEDIATELY, FOR THE TEMPLE KILLEEN, BELTON, AREA. EXCELLENT SASLARY, WEEKENDS OFF. CONTACT: CRYSTALS'S HOME HEALTH, 415 VAN DUYKE, 773-3297. E.O.E.

Salesperson Wanted 13+

Local builder seeking new home sales consultants with 2 years experience. Commission pay with draw. License not required. Send resume to Drawer 444, C/O Temple Telegram, P.O. Box 6114, Temple, Texas 76503.

DODGE COUNTRY KILLEEN

Position Open for

Sales Professional

- Excellent Working Environment
- Insurance Program
- 401K Plan
- Liberal Bonus Plan
- Paid Vacation

Qualifications

- Desire for Success
- Good Work Ethic
- Clean Living Habits
- Good Reputation
- Valid Drivers License

Interviewing Tuesday - Friday
9:00 am - 2:00 pm
October 26-29, 1993

The Scans Report:
A Three-Part Foundation

Basic Skills:
Reads, writes, performs arithmetic and mathematical operations, listens and speaks

A. *Reading* - locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules
B. *Writing* - communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts
C. *Arithmetic/Mathematics* - performs basic computations and approaches practical problems by choosing appropriately from a variety of mathematical techniques
D. *Listening* - receives, attends to, interprets, and responds to verbal messages and cues
E. *Speaking* - organizes ideas and communicates orally

Thinking Skills:
Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn, and reasons

A. *Creative Thinking* - generates new ideas
B. *Decision Making* - specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative
C. *Problem Solving* - recognizes problems and devises and implements plan of action
D. *Seeing Things in the Mind's Eye* - organizes, and processes symbols, pictures, graphs, objects, and other information
E. *Knowing How to Learn* - uses efficient learning techniques to acquire and apply new knowledge and skills
F. *Reasoning* - discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem

Personal Qualities:
Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty

A. *Responsibility* - exerts a high level of effort and perseveres towards goal attainment
B. *Self-Esteem* - believes in own self-worth and maintains a positive view of self
C. *Sociability* - demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings
D. *Self-Management* - assesses self accurately, sets personal goals, monitors progress, and exhibits self-control
E. *Integrity/Honesty* - chooses ethical courses of action

SCANS COMPETENCIES

I. **RESOURCES**: Identifies, organizes, plans, and allocates resources

- A. Time—Selects goal-relevant activities, ranks them, allocates time, and prepares and follows schedules
- B. Money—Uses or prepares budgets, makes forecasts, keeps records, and makes adjustments to meet objectives
- C. Material and Facilities—Acquires, stores, allocates, and uses materials or space efficiently
- D. Human Resources—Assesses skills and distributes work accordingly, evaluates performance and provides feedback

II. **INTERPERSONAL**: Works with others

- A. Participates as a Member of a Team—Contributes to group effort
- B. Teaches Others New Skills
- C. Serves Clients/Customers—Works to satisfy customer's expectations
- D. Exercises Leadership—Communicates ideas to justify position, persuades and convinces others, responsibly challenges existing procedures and policies
- E. Negotiates—Works toward agreements involving exchange of resources, resolves divergent interests
- F. Works with Diversity—Works well with men and women from diverse backgrounds

III. **INFORMATION**: Acquires and uses information

- A. Acquires and Evaluates Information
- B. Organizes and Maintains Information
- C. Interprets and Communicates Information
- D. Uses Computers to Process Information

IV. **SYSTEMS**: Understands complex interrelationships

- A. Understands Systems—Knows how social, organizational, and technological systems work and operates effectively with them
- B. Monitors and Corrects Performance—Distinguishes trends, predicts impacts on system operations, diagnoses systems' performance, and corrects malfunctions
- C. Improves or Designs Systems—Suggests modifications to existing systems and develops new or alternative systems to improve performance

V. **TECHNOLOGY**: Works with a variety of technologies

- A. Selects Technology—Chooses procedures, tools, or equipment including computers and related technologies
- B. Applies Technology to a Task—Understands overall intent and proper procedures for setup and operation of equipment
- C. Maintains and Troubleshoots Equipment—Prevents, identifies, or solves problems with equipment, including computers and other technologies

Teaching the SCANS Competencies

1. Teach Skills Explicitly

2. Use Skills in Context

3. Transfer Skills to New Contexts

Teach Skills Explicitly

- sequence the steps to be taken
  (identify the attributes)

- model the behavior
  (give examples and non examples)

- provide adequate practice in a variety of settings

Use Skills in Context

- provide opportunities to apply knowledge in real-life situations or simulations

- enables learners to apply discrete skills in complex situations

multiple complex and concrete experiences are essential for meaningful learning and teaching

content is inseparable from context

from Making Connections: Teaching and the Human Brain
-Renate Nummela Caine and Geoffrey Cain

Transfer Skills to New Contexts

- connections must be made between skills or concepts in one area to skills or concepts in another area
- enables learners to draw on past knowledge

Six Factors Which Affect Transfer

- mental set teacher provides
- degree of original learning
- critical attributes
- similarities
- differences
- associations

Resources

Definitions of Competencies and Foundation Skills[1,2]

COMPETENCIES

Resources: Identifies , organizes, plans, and allocates resources

- *Time* - Selects relevant, goal-related activities, ranks them in order of importance, allocates time to activities, and understands, prepares, and follows schedules.

  Competent performance in allocating time includes properly identifying tasks to be completed; ranking tasks in order of importance; developing and following an effective, workable schedule based on accurate estimates of such things as importance of tasks, time to complete tasks, time available for completion, and task deadlines; avoiding wasting time; and accurately evaluating and adjusting a schedule.

Money - Uses or prepares budgets, including making cost and revenue forecasts, keeps detailed records to track budget performance, and makes appropriate adjustments.

Competent performance in allocating money includes accurately preparing and using a budget according to a consistent and orderly accounting method; accurately calculating future budgetary needs based on projected costs and revenues; accurately tracking the extent to which actual costs and revenues differ from the estimated budget, and taking appropriate and effective actions.

Material and Facility - Acquires, stores, and distributes materials, supplies, parts, equipment, space, or final products in order to make the best use of them.

Competent performance in allocating material and facility resources includes carefully planning the steps involved in the acquisition, storage, and distribution of resources; safely and efficiently acquiring, transporting or storing them; maintaining them in good condition; and distributing them to the end user.

Human Resources - Assesses knowledge and skills and distributes work accordingly, evaluates performance and provides feedback.

Competent performance in allocating human resources includes accurately assessing people's knowledge, skills, abilities, and potential; identifying present and future workload; making effective matches between individual talents and workload; and actively monitoring performance and providing feedback.

Information: Acquires and uses information

Acquires and Evaluates Information - Identifies need for data, obtains them from existing sources or creates them, and evaluates their relevance and accuracy.

Competently performing the tasks of acquiring data and evaluating information includes posing analytic questions to determine specific information needs; selecting possible information and evaluating its appropriateness; and determining when new information must be created.

Organizes and Maintains Information - Organizes, processes, and maintains written or computerized records and other forms of information in a systematic fashion.

Competently performing the tasks of organizing and maintaining information includes understanding and organizing information from computer, visual, oral and physical sources in readily accessible formats, such as computerized data bases, spreadsheets, microfiche, video disks, paper files, etc.; when necessary, transforming data into different formats in order to organize them by the application of various methods such as sorting, classifying, or more formal methods.

Interprets and Communicates Information - Selects and analyzes information and communicates the results to others using oral, written, graphic, pictorial, or multi-media methods.

Competently performing the tasks of communicating and interpreting information to others includes determining information to be communicated; identifying the best methods to present information (e.g., overheads, handouts); if necessary, converting to desired format and conveying information to others through a variety of means including oral presentation, written communication, etc.

Uses Computers to Process Information - Employs computers to acquire, organize, analyze, and communicate information.

Competently using computers to process information includes entering, modifying, retrieving, storing, and verifying data and other information; choosing format for display (e.g., line graphs, bar graphs, tables, pie charts, narrative); and ensuring the accurate conversion of information into the chosen format.

Interpersonal: Works with others

Participates as a Member of a Team - Works cooperatively with others and contributes to group with ideas, suggestions, and effort.

Demonstrating competence in participating as a member of a team includes doing own share of tasks necessary to complete a project; encouraging team members by listening and responding appropriately to their contributions; building on individual team members' strengths; resolving differences for the benefit of the team; taking personal responsibility for accomplishing goals; and responsibly challenging existing procedures, policies, or authorities.

Teaches Others New Skills - Helps others learn.

Demonstrating competence in teaching others includes helping others to apply related concepts and theories to tasks through coaching or other means; identifying training needs; conveying job information to allow others to see its applicability and relevance to tasks; and assessing performance and providing constructive feedback/reinforcement.

Serves Clients/Customers - Works and communicates with clients and customers to satisfy their expectations.

Demonstrating competence in serving clients and customers includes actively listening to customers to avoid misunderstandings and identifying needs; communicating in a positive manner especially when handling complaints or conflict; efficiently obtaining additional resources to satisfy client needs.

Exercises Leadership - Communicates thoughts, feelings, and ideas to justify a position, encourages, persuades, convinces, or otherwise motivates an individual or groups, including responsibly challenging existing procedures, policies, or authority.

Demonstrating competence in exercising leadership includes making positive use of the rules/values followed by others; justifying a position logically and appropriately; establishing credibility through competence and integrity; and taking minority viewpoints into consideration.

Negotiates to Arrive at a Decision - Works toward an agreement that may involve exchanging specific resources or resolving divergent interests.

Demonstrating competence in negotiating to arrive at a decision involves researching opposition and the history of the conflict; setting realistic and attainable goals; presenting facts and arguments; listening to and reflecting on what has been said; clarifying problems and resolving conflicts; adjusting quickly to new facts/ideas; proposing and examining possible options; and making reasonable compromises.

Works with Cultural Diversity - Works well with men and women and with a variety of ethnic, social, or educational backgrounds.

Demonstrating competence in working with cultural diversity involves understanding one's own culture and those of others and how they differ; respecting the rights of others while helping them make cultural adjustments where necessary; basing impressions on individual performance, not on stereotypes; and understanding concerns of members of other ethnic and gender groups.

Systems: Understand complex interrelationships

Understands Systems - Knows how social, organizational, and technological systems work and operates effectively within them.

Demonstrating competence in understanding systems involves knowing how a system's structures relate to goals; responding to the demands of the system/organization; knowing the right people to ask for information and where to get resources; and functioning within the formal and informal codes of the social/organizational system.

Monitors and Corrects Performance - Distinguishes trends, predicts impact of actions on system operations, diagnoses deviations in the function of a system/organization, and takes necessary action to correct performance.

Demonstrating competence in monitoring and correcting performance includes identifying trends and gathering needed information about how the system is intended to function; detecting deviations from system's intended purpose; troubleshooting the system; and making changes to the system to rectify system functioning and to ensure quality of product.

Improves and Designs Systems - Makes suggestions to modify existing systems to improve products or services and develops new or alternative systems.

Demonstrating competence in improving or designing systems involves making suggestions for improving the functioning of the system/organization; recommending alternative system designs based on relevant feedback; and responsibly challenging the status quo to benefit the larger system.

Technology: Works with a variety of technologies

Selects Technology - Judges which set of procedures, tools, or machines, including computers and their programs, will produce the desired results.

Demonstrating competence in selecting technology includes determining desired outcomes and applicable constraints; visualizing the necessary methods and applicable technology; evaluating specifications; and judging which machine or tool will produce the desired results.

Applies Technology to Task - Understands the overall intent and the proper procedures for setting up and operating machines, including computers and their programming systems.

Demonstrating competence in how to apply technology to task includes understanding how different parts of machines interact and how machines interact with broader production systems; on occasion installing machines including computers; setting up machines or systems of machines efficiently to get desired results; accurately interpreting machine output; and detecting errors from program output.

Maintains and Troubleshoots Equipment - Prevents, identifies, or solves problems in machines, computers, and other technologies.

Demonstrating competence in maintaining and troubleshooting technology includes identifying, understanding, and performing routine preventative maintenance and service on technology; detecting more serious problems; generating workable solutions to correct deviations; and recognizing when to get additional help.

FOUNDATION SKILLS

Basic Skills

Reading - Locates, understands, and interprets written information in prose and documents-including manuals, graphs, and schedules-to perform tasks; learns from text by determining the main idea or essential message; identifies relevant details, facts, and specifications; infers or locates the meaning of unknown or technical vocabulary; and judges the accuracy, appropriateness, style, and plausibility of reports, proposals, or theories of other writers.

Writing - Communicates thoughts, ideas, information, and messages in writing; records information completely and accurately; composes and creates documents such as letters, directions, manuals, reports, proposals, graphs, flow-charts; uses language, style, organization, and format appropriate to the subject matter, purpose, and audience; includes supporting documentation and attends to level of detail; and checks, edits, and revises for correct information, appropriate emphasis, form, grammar, spelling, and punctuation.

Arithmetic - Performs basic computations; uses basic numerical concepts such as whole numbers and percentages in practical situations; makes reasonable estimates of arithmetic results without a calculator; and uses tables, graphs, diagrams, and charts to obtain or convey quantitative information.

Mathematics - Approaches practical problems by choosing appropriately from a variety of mathematical techniques; uses quantitative data to construct logical explanations for real world situations; expresses mathematical ideas and concepts orally and in writing; and understands the role of chance in the occurrence and prediction of events. [This skill definition is not yet completely developed.]

Listening - Receives, attends to, interprets, and responds to verbal messages and other cues such as body language in ways that are appropriate to the purpose; for example, to comprehend, to learn, to critically evaluate, to appreciate, or to support the speaker.

Speaking - Organizes ideas and communicates oral messages appropriate to listeners and situations; participates in conversation, discussion, and group presentations; select an appropriate medium for conveying a message; uses verbal language and other cues such as body language appropriate in style, tone, and level of complexity to the audience and the occasion; speaks clearly and communicates a message; understands and responds to listener feedback; and asks questions when needed.

Thinking Skills

Creative Thinking - Uses imagination freely, combines ideas or information in new ways, makes connections between seemingly unrelated ideas, and reshapes goals in ways that reveal new possibilities.

Decision Making - Specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative.

Problem Solving - Recognizes that a problem exists (i.e., there is a discrepancy between what is and what should or could be); identifies possible reasons for the discrepancy; devises and implements a plan of action to resolve it; evaluates and monitors progress; and revises plan as indicated by findings.

Seeing Things in the Mind's Eye - Organizes and processes symbols, pictures, graphs, objects or other information; for example, sees a building from a blueprint, a system's operation from schematics, the flow of work activities from narrative descriptions, or the taste of food from reading a recipe.

Knowing How To Learn - Recognizes and can use learning techniques to apply and adapt new knowledge and skills in both familiar and changing situations and is aware of teaming tools such as personal teaming styles (visual, aural, etc.), formal learning strategies (note taking or clustering items that share some characteristics), and informal teaming strategies (awareness of unidentified false assumptions that may lead to faulty conclusions). [This skill definition is not yet completely developed.]

Reasoning - Discovers a rule or principle underlying the relationship between two or more objects and applies it in solving a problem; uses logic to draw conclusions from available information; extracts rules or principles from a set of objects or written text; applies rules and principles to a new situation or determines which conclusions are correct when given a set of facts and a set of conclusions. [This skill definition is not yet completely developed.]

Personal Qualities

Responsibility - Exerts a high level of effort and perseverance toward goal attainment; works hard to become excellent at doing tasks by setting high standards, paying attention to details, working well and displaying a high level of concentration even when assigned an unpleasant task; and displays high standards of attendance, punctuality, enthusiasm, vitality, and optimism in approaching and completing tasks.

Self-Esteem - Believes in own self-worth and maintains a positive view of self; demonstrates knowledge of own skills and abilities; is aware of impact on others; and knows own emotional capacity and needs and how to address them. [This skill definition is not yet completely developed.]

Social - Demonstrates understanding, friendliness, adaptability, empathy and politeness in new and on-going group settings; asserts self in familiar and unfamiliar social situations; relates well to others; responds appropriately as the situation requires; and takes an interest in what others say and do.

Self-Management - Assesses own knowledge, skis, and abilities accurately; sets well-defined and realistic personal goals; monitors progress toward goal attainment and motivates self through goal achievement; exhibits self-control and responds to feedback unemotionally and non-defensively; and is a "self-starter."

Integrity/Honesty - Can be trusted; recognizes when faced with making a decision or exhibiting behavior that may break with commonly-held personal or societal values; understands the impact of violating these beliefs and codes on an organization, self, and others; and chooses an ethical course of action. [This skill definition is not yet completely developed.]

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[1] US Department of Labor. (1993). Teaching the SCANS Skills. US Government Printing Office (ISBN 0A-16-0XXXXX-X)

[2] US Department of Labor. (1993). Skills and Tasks for Jobs, A SCANS Report for America 2000. US Government Printing Office (ISBN 0-16-036177-X

EXHIBIT 2 from Teaching the SCANS Skills. The Secretary's Commission on Achieving Necessary Skills, US Department of Labor, US Government Printing Office. pp. 13,14.

EXHIBIT 2
Assignments that Integrate the SCANS Competencies Into the Core Curriculum Area

	CURRICULUM AREA				
Competency	English/Writing	Mathematics	Science	Social Studies/Geography	History
Resources	Write a proposal for an after-school career lecture series that schedules speakers, coordinates audio-visual aids, and estimates costs.	Develop a monthly family budget, taking into account expenses and revenues, and--using information from the budget plan--schedule a vacation trip that stays within the resources available.	Plan the material and time requirements for a chemistry experiment, to be performed over a two-day period, that demonstrates a natural growth process in terms of resource needs.	Design a chart of resource needs for a community of African Zulus. Analyze the reasons why three major cities grew to their current size.	Study the Vietnam War, researching and making an oral presentation on the timing and logistics of transport of materials and troops to Vietnam and on the impact of the war on the Federal budget.
Interpersonal Skills	Discuss the pros and cons of the argument that Shakespeare's *Merchant of Venice* is a racist play and should be banned from the school curriculum.	Present the results of a survey to the class, and justify the use of specific statistics to analyze and represent the data.	Work in a group to design an experiment to analyze the lead content in the school's water. Teach the results to an elementary school class.	In front of a peer panel, debate whether to withdraw U.S. military support from Japan. Simulate urban planning exercise for Paris.	Study America's Constitution and roleplay negotiation of the wording of the free States/slave States clause by different signers.
Information	Identify and abstract passages from a novel to support an assertion about the values of a key character.	Design and carry out a survey, analyzing data in a spreadsheet program using algebraic formulas. Develop table and graphic display to communicate results.	In an entrepreneurship project, present statistical data on a high-tech company's production/sales. Use computer to develop statistical charts.	Using numerical data and charts, develop and present conclusions about the effects of economic conditions on the quality of life in several countries.	Research and present papers on effect of Industrial Revolution on class structure in Britain, citing data sources used in drawing conclusions.

	CURRICULUM AREA				
Competency	English/Writing	Mathematics	Science	Social Studies/Geography	History
Systems	Develop a computer model that analyzes the motivation of Shakespeare's *Hamlet.* Plot the events that increase or decrease Hamlet's motivation to avenge the death of his father by killing Claudius.	Develop a system to monitor and correct the heating/cooling process in a computer laboratory, using principles of statistical process control.	Build a model of human population growth that includes the impact of the amount of food available on birth and death rates, etc. Do the same for a growth model for insects.	Analyze the accumulation of capital in industrialized nations in systems terms (as a reinforcing process with stocks and flows).	Develop a model of the social forces that led to the American Revolution. Then explore the fit between that model and other revolutions.
Technology	Write an article showing the relationship between technology and the environment. Use word processing to write and edit papers after receiving teacher feedback.	Read manuals for several data-processing programs and write a memo recommending the best programs to handle a series of mathematical situations.	Calibrate a scale to weigh accurate portions of chemicals for an experiment. Trace the development of this technology from earliest uses to today.	Research and report on the development and functions of the seismograph and its role in earthquake prediction and detection.	Analyze the effects of wars on technological development. Use computer graphics to plot the relationship of the country's economic growth to periods of peace and war.

When identifying skills to be taught, a balance must be maintained between SCANS and the integrity of the content.

Identify skills which are appropriate to your content but not painfully obvious. If an identified SCAN skill is a defining part of your curriculum, do not spend time "integrating" it into the curriculum. It better be there already. Look for skills which can support your discipline—especially those which persons in the field use in connection with their jobs.

Examples

- computer programmers - do not focus on "technology" but rather "systems" or perhaps "interprets and communicates information"
- science - "interpersonal" as opposed to "material and facilities"
- social sciences - focus on "technology" as opposed to "social systems", "information", or "interpersonal".

TEACHING THE SCANS SKILLS

I. Teach Skills Explicitly
- A. Sequence the steps to be taken (identify the attributes)
- B. Model the behavior (give examples and non examples)
- C. Provide adequate practice in a variety of settings

Too often we teach presentation skills by telling the student to "make a presentation" or we teach interpersonal skills by saying "work in groups." Evidence that these skills can be taught is found in the proliferation of the number of business and training consultants which specialize in teaching such skills. One of the tenets of Total Quality Management is that you empower people after you have enabled them. If we, as teachers, expect our students to demonstrate certain desirable skills we need to enable them to do so. Some SCAN skills, such as working well with others are also beneficial to the learning process. Cooperative learning is both an instructional technique and a valuable workplace skill. Research shows that successful cooperative learning classrooms spend time teaching students how to learn cooperatively. "Cooperation" becomes an outcome as well as a learning tool.

II. Use Skills In Context (moving from the objective to the subjective)
- A. Provide opportunities to apply knowledge in real-life situations or simulations
- B. Enables learners to apply discrete skills in complex situations

- obvious examples are clinicals, apprenticeships, internships, and cooperatives
- simulation examples -- case studies in management class (role playing) - planning a trip to Mexico in a Spanish Class provides students with the opportunity to use a variety of skills while reinforcing vocabulary and culture lessons learned
- project based curriculum -- having students apply what they have learned or are learning to a "real-word" situation or problem

III. Transfer Skills to New Contexts
- A. Connections must be made between skills or concepts in one area to skills or concepts in another area
- B. Enables learners to draw on past knowledge
- C. 6 factors which affect transfer
  1. Mental set teacher provides
  2. Degree of original learning
  3. Critical attributes
  4. Similarities
  5. Differences
  6. Associations

"The inability of students to connect what they learn in school with any real-world applications also leads to what cognitive scientists describe as 'inert' knowledge: information that is stored in the head, but never used." (Rothman, Robert. Education Week Oct. 9, 1991.)

Activity Sheets

Educator Self-Assessment

Identify from three or four of the twenty SCANS competencies that you feel represent your strongest skills as a worker.

In the space provided, draw a visual representation of the skill.

Content Assessment

Identify one or two SCANS competencies which you feel are a "defining aspect" of the discipline you teach. (be prepared to justify your answer)

_____

_____

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IDEAS FOR INTEGRATING SCAN COMPETENCIES INTO ACADEMIC COURSES

HISTORY

A local resident lives in a home that is more than 100 years old. Help the resident apply for a Texas Historical Marker and/or National Registry.

CHEMISTRY

Design the "perfect" chemical storeroom.

Write a protocol for shutting down a laboratory in case of emergency.

BIOLOGY

Plan the clean-up of an ecologically sensitive area.

Prepare the pruning, fertilizing, and planting schedule for the campus for optimum flowering and showiness at all times during the year, within a $$$ budget.

ART

Create a marketing/advertising campaign for a local non-profit, charitable group.

Design a user-friendly map of the campus for visitors.

ENGLISH

Create "Cliff Notes" on various pieces of literature for a lower level class.

Write résumés for literary characters, e.g., Macbeth, Lady Macbeth.

SPANISH

Plan a trip from your location to Mexico, Central America, or Spain.

Your Assignment

1. List the tasks performed by students.
2. Using the SCANS competencies, identify the skills demonstrated by the students.

Tasks performed	SCANS Competencies Demonstrated

Your Assignment

1. List the tasks performed by students.

2. Using the SCANS competencies, identify the skills demonstrated by the students.

Tasks performed	SCANS Competencies Demonstrated

CONTENT AREA _____

SCANS competency to be taught: _____

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How can I teach this skill explicitly? (What skills do students need to be successful?)

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In what context will I teach this skill? (content objective or workplace related)

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How can I help the student transfer this skill to new contexts? (What connections can I help the student make to other content areas or real-world activities?)

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Sample matrix for identifying where SCANS competencies are being taught and reinforced.

Use this type of matrix to insure all competencies are taught and that competencies are taught/used in a variety of context.

Curriculum Area

Competency	English/Writing	Mathematics	Science	Social Studies	Technical
Resources					
Interpersonal Skills					
Information					
System					
Technology					

SAMPLE

SCANS Matrix Model

Program: Computer Information Systems												Crediential: Certificate
List of All Courses Required and Identified Competencies												
CITE 1303 Fundamentals	CITE 1307 Program Design and Dev	CITE 1311 COBOL Programming	CITE 1313 Mini Computer Applications	CITE 2301 Minicomputer Systems	CITE 2303 Advanced COBOL	CITE 2305 RPG/400	CITE 2309 FORTRAN	CITE 2319 Computer Languages	CITE 2315 System Analysis and Desgn	CITE 2327 UNIX	CITE 2418 Programminig C+	
												I. RESOURCES
x			x		x			x				A. Time
	x							x				B. Money
								x			x	C. Material and Facilities
					x			x		x		D. Human Resources
												II. INTERPERSONAL
	x				x	x	x		x			A. Participates as a Member of a Team
x	x	x			x	x	x					B. Teaches Others New Skills
x			x	x		x			x			C. Serves Clients/Customers
	x		x						x			D. Exercises Leadership
	x							x	x			E. Negotiates
x					x	x	x		x			F. Works with Diversity
												III. INFORMATION
	x					x	x	x			x	A. Acquires and Evaluates Information
	x			x		x		x				B. Organizes and Maintains Information
	x	x				x		x				C. Interprets and Communicates Information
x	x	x	x	x	x	x	x	x	x	x	x	D. Uses Computers to Process Information
												IV. SYSTEMS
	x				x	x	x		x	x	x	A. Understands Systems
	x				x	x	x		x	x	x	B. Monitors and Corrects Performance
	x			x	x				x		x	C. Improves or Designs Systems
												V. TECHNOLOGY
x				x	x							A. Selects Technology
x	x		x					x				B. Applies Technology to a Task
x			x	x	x	x				x		C. Maintains and Troubleshoots Equipment